

# Economically Valuing Cultural Ecosystem Services: A Review of the Methods with a Focus on Green Care

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## Background

- Growing interest in **Green Care (GC)**: catch all term for initiatives with the primary aim of improving human health and wellbeing through a conscious interaction with nature
- Majority of studies focused on the therapeutic effectiveness, limited studies evaluating the **economic value of the benefits**
- Health and wellbeing benefits from GC can be conceptualised as **Cultural Ecosystem Services (CES)**, defined as intangible benefits of nature
- Choice of methods for the economic valuation of CES is not straightforward; context dependent
- This study summarises preliminary work and results of the first year of the UniPhD project "Green CES"

## Aims

To undertake a comprehensive analysis of the literature on the monetary valuation of CES, with the intention of identifying and evaluating suitable methods for a subsequent valuation of the health and wellbeing benefits produced by Green Care

## Methods

### Literature search

**Database:** Scopus

**Search terms:** ( "Cultural service\*" OR Cultural eco-system service\*" OR "Cultural ecosystem service\*" OR "nature-based intervention\*" OR "valuing nature" OR "nature experienc\*" ) AND ( economic\* OR monetis\* OR quantitative ) AND ( analysis OR evaluation\* OR valuation\* OR assessment\* OR valu\* OR cost\* )

**Searched in:** Title, Abstract, Keyword

**Publication year:** 2005 - 2023

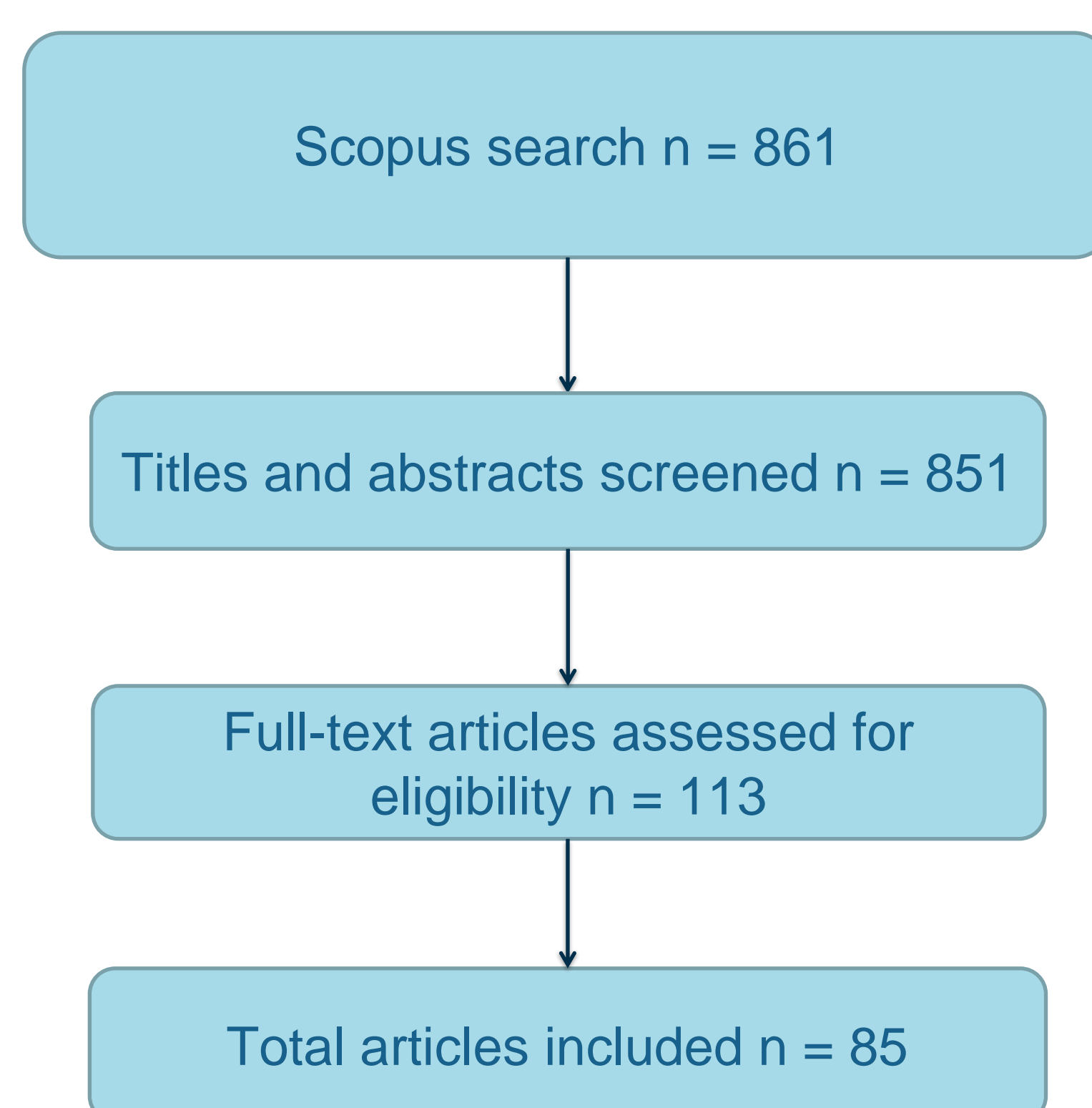
**Type of document:** Excluded book chapters, conferences papers, short surveys, editorials, and books.

**Number of articles:** Search results 861 articles

**Analysis:** Extracted information:

Methods employed, CES subcategory, study environment, country, scale, unit of output, population if interviewed, focused on CES or broader analysis, brief critical evaluation and relevant points for GC valuation.

**Figure 1:** Literature review flow chart



### Inclusion criteria

- Estimates monetary values of CES or intangible benefits from nature
- A useful review on the economic evaluation of health benefits from nature

### Exclusion criteria

- No monetary evaluation undertaken
- No application to CES
- Duplicates
- Not in English

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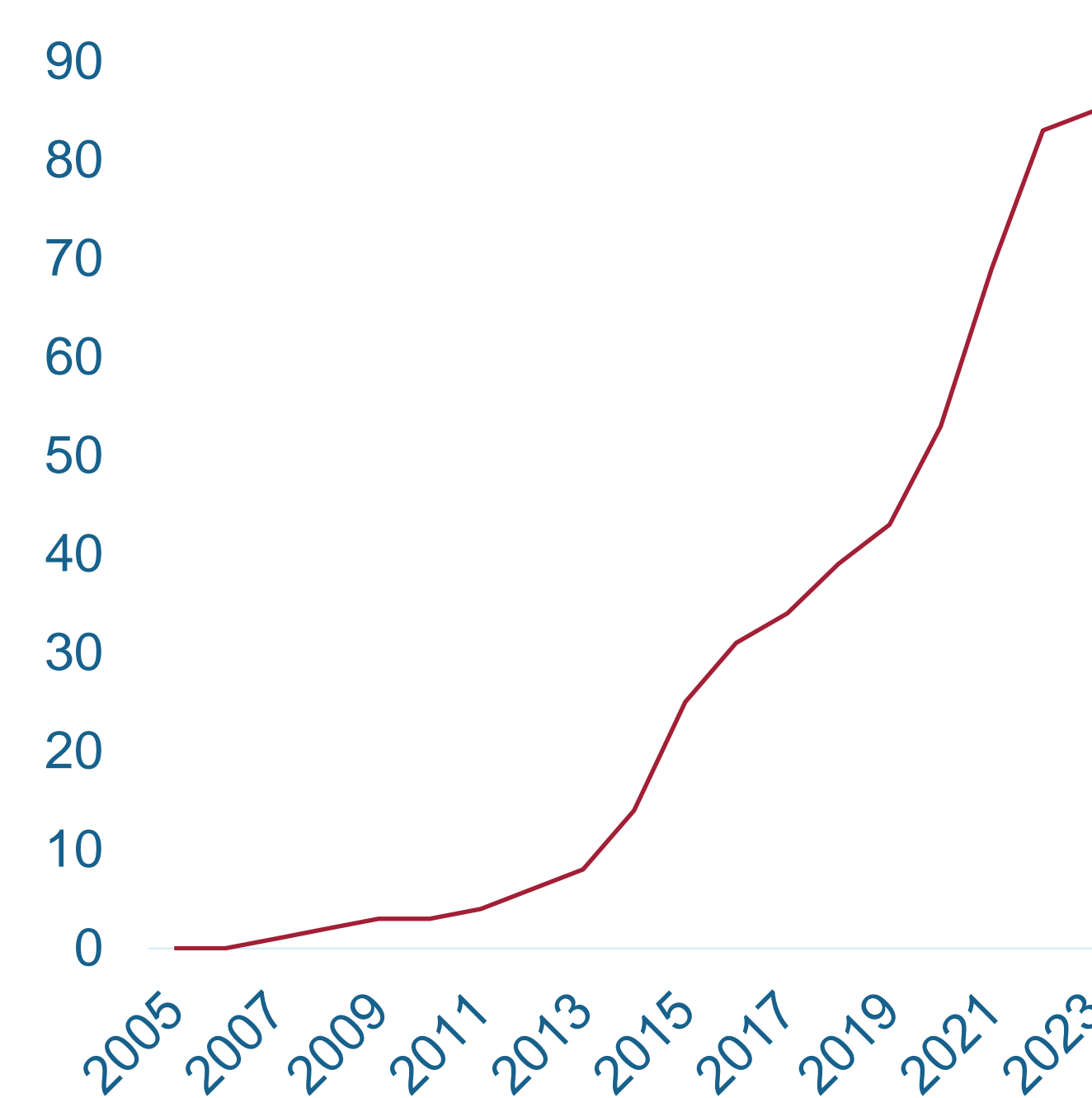
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## Preliminary Results

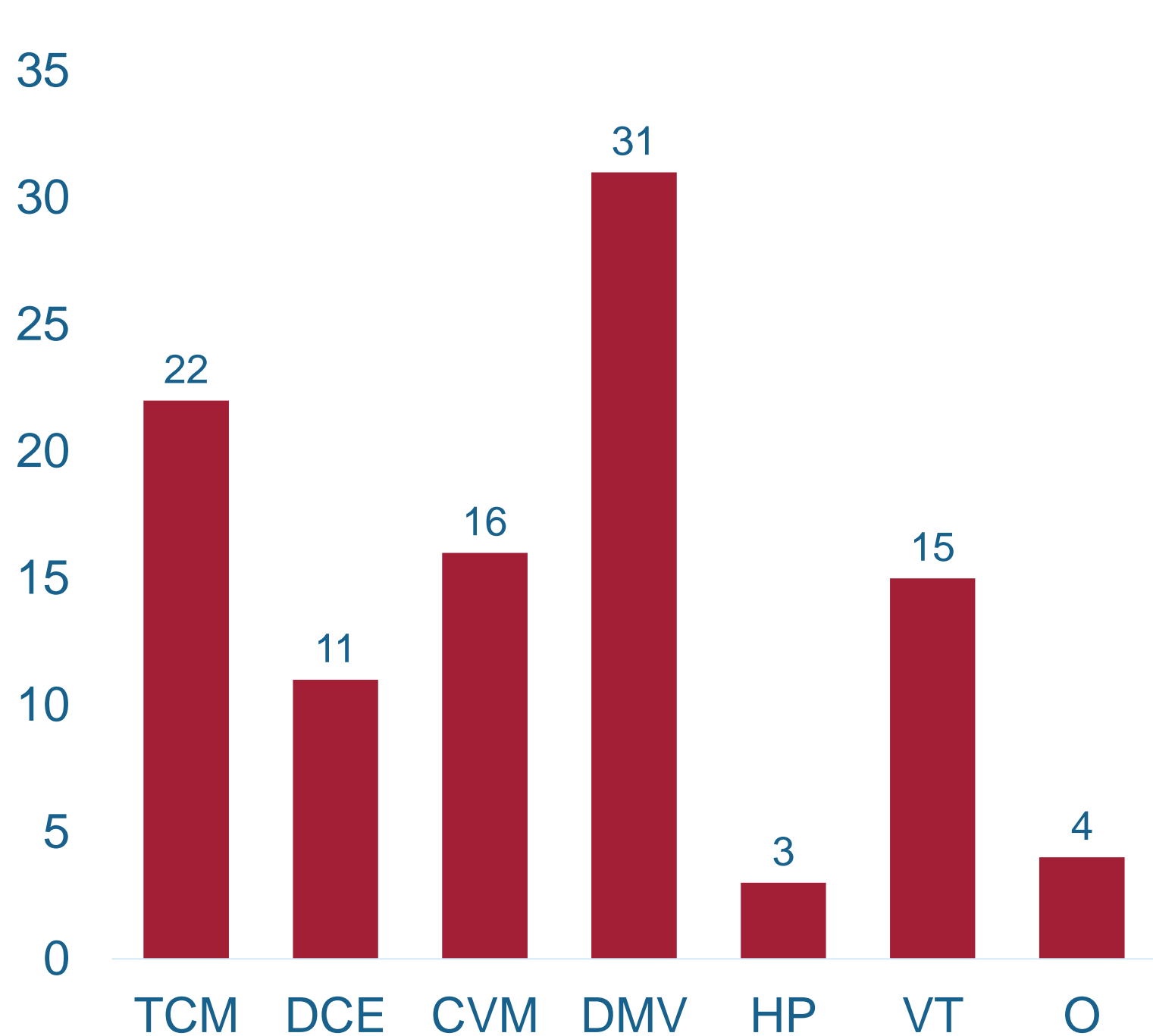
Of the 851 unique articles from database search, 85 met inclusion the criteria Analysis identified several **themes** in the literature:

- Use of **mixed-methods**
- **Frequently employed methods:** direct monetary valuation, travel cost method, contingent valuation and value transfer, see Figure 3
- Majority of studies (n=54) **focused on CES**, 31 studies included CES as part of a broader analysis
- Literature has been growing steadily from 2005, see Figure 2
- **CES subcategories:** Recreation and tourism are the most studied, followed by aesthetics, see Figure 4
- Health and wellbeing CES subcategory is poorly represented (5% of studies), see Figure 4

**Figure 2:** Cumulative total of articles published from 2005-2023

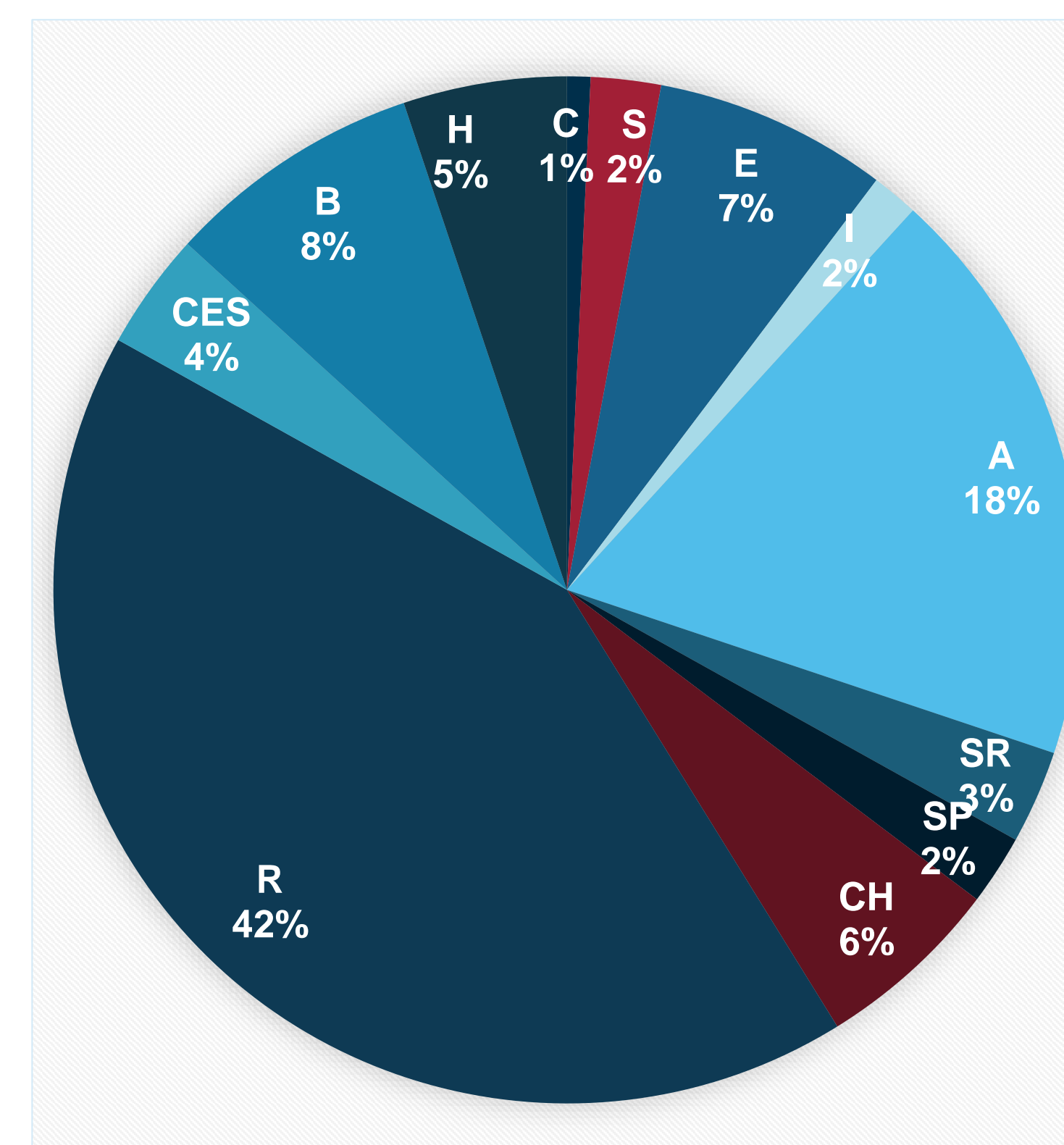


**Figure 3:** Total number of different methods employed to value CES



TCM - Travel cost method  
 DCE - Discrete choice experiment  
 CVM - Contingent valuation method  
 DMV - Direct Market valuation  
 HP - Hedonic pricing  
 VT - Value transfer  
 O - Other

**Figure 4:** CES sub-categories evaluated



C: Cultural diversity  
 S: Spiritual and religious values  
 E: Educational values  
 I: Inspiration  
 A: Aesthetic values  
 SR: Social relations  
 SP: Sense of place  
 CH: Cultural heritage values  
 R: Recreation and tourism  
 CES: General CES  
 B: Bequest values  
 H: Health and wellbeing

## Discussion & Conclusion

- This review provides an up to date review of the literature on the monetary valuation of CES
- Conceptualising the health and wellbeing benefits from GC as CES can aid in their economic valuation
- Health and wellbeing is rarely evaluated as a CES
- In the context of GC valuation, the TCM, CVM, DCE and DMV methods have potential, it is unlikely that the HP and VT methods will be suitable
- **Challenges remain** when applying economic valuation methods to the topic of GC
- We recommend the **use of mixed-methods** and combination of market and non-market methods
- The results and discussion presented here represent the **preliminary work** of the UniPhD programme, and hence will be further developed and **adjusted in future**



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